

# WHERE TO START WITH YOUR NI 5431 PXI™/PCI-BASED VIDEO WAVEFORM GENERATOR

This document explains how to set up, test, and begin using your NI 5431.

You can control the NI 5431 interactively with the Video Generator Wizard soft front panel software. You can also control the NI 5431 programmatically with LabVIEW, an Application Development Environment (ADE). LabVIEW uses the NI-FGEN Interchangeable Virtual Instrument (IVI) driver and the LabVIEW toolkit for the video generator to create and generate video waveforms.

## Install the Arb Software CD

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There are two CDs to install for this product. The first CD installs the hardware driver software common to both the NI 5411 and NI 5431. The second CD, which you will install later, installs the video software toolkit needed to run the video applications.

Use the following procedure to install the hardware driver software:

1. Insert your National Instruments arb software CD into your CD-ROM drive. Click on the **Install** option in the installation window that appears.
2. To install the instrument driver, ADE examples, and VirtualBench-ARB soft front panel, choose the **Programmatic and Interactive Support** option. To install only the VirtualBench-ARB and VirtualBench-FG soft front panels, choose the **Interactive Support Only** option.

The software installation for the arb software CD is complete.

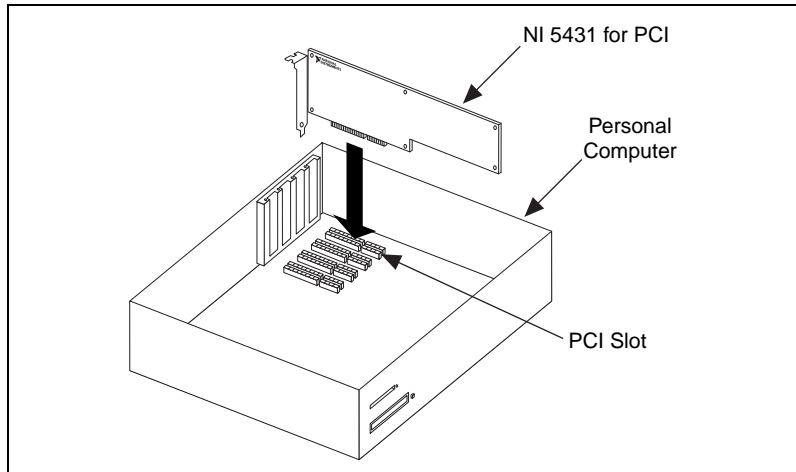
# Install Your Hardware

Install your NI 5431 hardware as shown in the following illustrations.

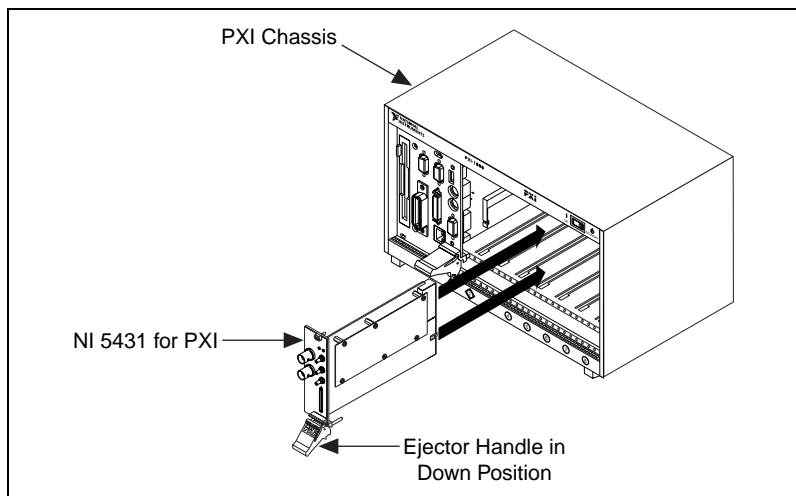


**Caution** You must turn off your PC or chassis before installing your NI 5431. To prevent damage due to electrostatic discharge or contamination, handle the board using the edges or the metal bracket.

## ◆ NI 5431 (PCI)



## ◆ NI 5431 (PXI)



# Configure and Test Your NI 5431

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To configure and test your NI 5431, double-click the **Measurement & Automation** icon on your computer desktop and follow these steps:

1. Double-click the **Devices and Interfaces** icon to open a list of recognized devices.
2. Find the device in the list that corresponds to your NI 5431. Make a note of the device number to which your device has been assigned. You will need to use this device number when you program your device in the *Generating a Video Signal* section of the *NI 5431 Composite Video Generator Software User Manual*.
3. Right-click the device name and select **Properties** from the pop-up menu.
4. From the Properties window, click the **Test Resources** button to test the NI 5431 resources. A dialog box appears and indicates if the resource test has passed.
  - If the test passes, click **OK**.
  - If the test does not pass, verify that the board is plugged in properly. If the test still fails, contact National Instruments for support.
5. Click **Run Test Panels** to run the functional test panels and begin using your NI 5431. The Test Panel dialog box appears.
6. Connect an oscilloscope to your NI 5431. In the Test Panel dialog box, select the appropriate Output Type for the waveform, Output Frequency (Hz), and Output Attenuation (mdB).
7. Click **Apply Changes** if necessary.



**Note** At this point in the installation process, the NI 5431 will not generate a video waveform. It can only generate test signals such as sine, square, or triangle signals.



**Caution** Do not set the output voltage level for your NI 5431 to more than  $\pm 1 V_{pk-pk}$  into  $75 \Omega$ , as this may damage your video display device or your device under test (DUT). Always check the output levels before connecting a DUT to your NI 5431. National Instruments is not responsible for any damage caused to your DUT.

8. Click **Close** when you finish testing your NI 5431.
9. Click **OK** in the Properties window.

You have successfully installed and configured the necessary software and hardware to use your NI 5431 as an arbitrary waveform generator.

# Install the Video Software Toolkit CD

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Use the following procedure to install the Video Software Toolkit:

1. Insert your National Instruments Video Software Toolkit installation CD into your CD-ROM drive. Click the **Install** option in the installation window that appears.
2. To install the LabVIEW examples and Video Generator Wizard soft front panel, follow the instructions on your screen.

You have successfully installed and configured the necessary software and hardware to use your NI 5431 with the Video Software Toolkit.

## Control Your NI 5431

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You are now ready to use the Video Generator Wizard soft front panel to control your NI 5431. Double-click the **Video Generator Wizard** icon on your desktop or select **Start»Programs»National Instruments»ni-video»Generator»Video Generator Wizard**. See the *NI 5431 Composite Video Generator Software User Manual* for more details on how to control the NI 5431 board with the Video Generator Wizard or to control your NI 5431 programmatically using the supplied LabVIEW driver tools and examples.

